

This review was performed with guidance from the National Functional Guidelines for Inorganic Superfund Methods Data Review (US EPA, 2020, US EPA). This validation guidance document specifically addresses analyses performed in accordance with the CLP analytical methods and is not completely applicable to the type of analyses and analytical protocols performed for the Standard Method (SM), SW-846, ASTM, and/or US EPA methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the quality of the analytical results and compliance relative to the Standard Method (SM), SW-846, ASTM, and/or US EPA utilized by the laboratory. This QA review was performed on the data associated with Sample Delivery Group (SDG):

L1864258

The findings offered in this report are based on a review of the Chain-of-Custody Record and Case Narrative, sample preservation and condition upon laboratory receipt, holding times, chemical yield, field and laboratory blank results, laboratory and field duplicate precision, laboratory control sample / laboratory control sample duplicate recoveries and precision, matrix spike / matrix spike duplicate recoveries and precision, and/or percent solids (as applicable). All review items may not have been included in this SDG; therefore, only those items included in this SDG were addressed in the QA review.

A summary of the results of the data review process is provided below:

| Sample | Sample Type | Method | Analyte | T/D | Result | Qual | Reason Code(s) | MDL | QL | Uncertainty | Unit | Detect? |
|----------------------|-------------|--------|----------|-----|--------|------|----------------|-------|-------|-------------|-------|---------|
| GACO0529T156-1CRS014 | N | E901.1 | Lead-214 | N | 0.654 | J | FD | 0.229 | 0.229 | 0.150 | pCi/g | Y |
| GACO0529T156-1CRC014 | FD | E901.1 | Lead-214 | N | 0.922 | J | FD | 0.194 | 0.194 | 0.142 | pCi/g | Y |

Data Qualifiers

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate. |
| R | The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample. |
| J | The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. |
| J+ | The result is an estimated quantity, but the result may be biased high. |
| J- | The result is an estimated quantity, but the result may be biased low. |
| UJ | The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise. |

Reason Codes and Explanations

| | |
|-----|--|
| BF | Contamination present in a field blank (e.g ., Field Blank, Equipment Blank, etc .); evaluation criteria exceeded |
| BL | Contamination present in a laboratory blank (e.g ., Method Blank, Instrument Blank, etc .); evaluation criteria exceeded |
| BT | Contamination present in the Trip Blank; evaluation criteria exceeded |
| CC | Possible contamination due to carryover from a previous sample |
| CR | Calculated result in which one or more of the components has been qualified |
| CRQ | Calculated result flagged due to reporting protocol |
| CT | Cooler temperature criteria not met |
| CY | Chemical Yield recovery criteria not met |
| EC | Result exceeds the calibration range; potential bias indeterminate |
| FD | Field duplicate imprecision; potential bias indeterminate |
| GH | Headspace present in the gamma spectrometer sample analysis vessel; potential bias indeterminate |
| GS | Low sample density in the gamma spectrometer sample analysis vessel; potential bias indeterminate |
| HT | Holding time exceeded |
| HV | Headspace present in volatile vials |
| IN | Interference (e.g ., laboratory, chemical, chromatographic/instrumental, and/or matrix) present in the analysis |
| LC | Laboratory control sample/laboratory control sample duplicate recovery criteria not met |
| LCP | Laboratory control sample/laboratory control sample duplicate precision criteria not met; potential bias indeterminate |
| LD | Laboratory duplicate precision criteria not met; potential bias indeterminate |

| | |
|-----|--|
| MDP | Laboratory deviated from the method for a method-defined parameter, based on regulatory requirements |
| MS | Matrix spike/matrix spike duplicate recovery criteria not met |
| MSP | Matrix spike/matrix spike duplicate precision criteria not met; potential bias indeterminate |
| PD | Post-digestion spike recovery criteria not met |
| OT | Other deficiencies, see validation report for additional details |
| PS | Low percent solids; potential bias indeterminate |
| RA | Replicate/multiple analyses criteria not met; potential bias indeterminate |
| RL | The analysis meets all qualitative identification criteria, but the measured concentration is between the method detection limit and the quantitation or reporting limit; potential bias indeterminate |
| RS | Reporting limit standard(s) outside of acceptance limits |
| SC | Relative percent difference between two columns exceeds criteria; potential bias indeterminate |
| SP | Sample preservation criteria not met |
| SR | Surrogate recovery criteria not met |
| ST | Sample container type incorrect |
| SU | Sample result is less than the two-sigma uncertainty |
| SUN | Absolute value of the negative sample result is greater than the two-sigma uncertainty |
| SW | Sample switch suspected |
| TD | Result for dissolved constituent significantly exceeded result for total constituent; potential bias indeterminate |
| TIC | Tentatively identified compound, quantified using an assumed calibration factor; potential bias indeterminate |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-01 |
| Sys Sample Code | GACO0529T156-1CRS001 |
| Sample Name | GACO0529T156-1CRS001 |
| Sample Date | 5/29/2025 10:45:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 1.09 | | | 0.315 | 0.489 | 0.489 | 0.489 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.862 | | | 0.215 | 0.257 | 0.257 | 0.257 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.946 | | | 0.195 | 0.268 | 0.268 | 0.268 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 1.50 | | | 0.850 | 1.47 | 1.47 | 1.47 | Y | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.348 | U | | 1.22 | 2.71 | 2.71 | 2.71 | N | Y | 1 | NA |

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|-----------------|-----------------------|
| Lab Sample ID | L1864258-02 |
| Sys Sample Code | GACO0529T156-1CRS002 |
| Sample Name | GACO0529T156-1CRS002 |
| Sample Date | 5/29/2025 11:00:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.856 | | | 0.234 | 0.433 | 0.433 | 0.433 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.612 | | | 0.158 | 0.206 | 0.206 | 0.206 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.778 | | | 0.132 | 0.191 | 0.191 | 0.191 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.694 | U | | 0.586 | 0.987 | 0.987 | 0.987 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.680 | U | | 0.632 | 1.43 | 1.43 | 1.43 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-03 |
| Sys Sample Code | GACO0529T156-1CRC002 |
| Sample Name | GACO0529T156-1CRC002 |
| Sample Date | 5/29/2025 11:00:00 AM |
| Sample Type | FD |
| Matrix | SO |
| Parent Sample | GACO0529T156-1CRS002 |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.660 | U | | 0.326 | 0.728 | 0.728 | 0.728 | N | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.766 | | | 0.255 | 0.358 | 0.358 | 0.358 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.678 | | | 0.195 | 0.310 | 0.310 | 0.310 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 1.19 | U | | 0.903 | 1.49 | 1.49 | 1.49 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.969 | U | | 0.811 | 1.86 | 1.86 | 1.86 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-04 |
| Sys Sample Code | GACO0529T156-1CRS003 |
| Sample Name | GACO0529T156-1CRS003 |
| Sample Date | 5/29/2025 11:20:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 1.03 | | | 0.278 | 0.540 | 0.540 | 0.540 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.524 | | | 0.162 | 0.246 | 0.246 | 0.246 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.606 | | | 0.129 | 0.189 | 0.189 | 0.189 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.556 | U | | 0.665 | 1.15 | 1.15 | 1.15 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | -1.02 | U | | 0.742 | 1.60 | 1.60 | 1.60 | N | Y | 1 | NA |

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|-----------------|-----------------------|
| Lab Sample ID | L1864258-05 |
| Sys Sample Code | GACO0529T156-1CRS004 |
| Sample Name | GACO0529T156-1CRS004 |
| Sample Date | 5/29/2025 11:35:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.870 | | | 0.263 | 0.532 | 0.532 | 0.532 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.660 | | | 0.176 | 0.256 | 0.256 | 0.256 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.718 | | | 0.165 | 0.269 | 0.269 | 0.269 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.264 | U | | 0.874 | 1.71 | 1.71 | 1.71 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | -1.49 | U | | 1.50 | 3.29 | 3.29 | 3.29 | N | Y | 1 | NA |

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| Lab Sample ID | L1864258-06 |
| Sys Sample Code | GACO0529T156-1CRS005 |
| Sample Name | GACO0529T156-1CRS005 |
| Sample Date | 5/29/2025 10:40:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.508 | | | 0.150 | 0.283 | 0.283 | 0.283 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.460 | | | 0.117 | 0.163 | 0.163 | 0.163 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.592 | | | 0.120 | 0.141 | 0.141 | 0.141 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.775 | U | | 0.501 | 0.896 | 0.896 | 0.896 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.661 | U | | 0.811 | 1.71 | 1.71 | 1.71 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-07 |
| Sys Sample Code | GACO0529T156-1CRS006 |
| Sample Name | GACO0529T156-1CRS006 |
| Sample Date | 5/29/2025 11:10:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 1.45 | | | 0.459 | 0.869 | 0.869 | 0.869 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.747 | | | 0.268 | 0.414 | 0.414 | 0.414 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.929 | | | 0.256 | 0.410 | 0.410 | 0.410 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 1.53 | U | | 1.29 | 2.34 | 2.34 | 2.34 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 1.57 | U | | 2.13 | 4.10 | 4.10 | 4.10 | N | Y | 1 | NA |

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| Lab Sample ID | L1864258-08 |
| Sys Sample Code | GACO0529T156-1CRS007 |
| Sample Name | GACO0529T156-1CRS007 |
| Sample Date | 5/29/2025 11:35:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.946 | | | 0.292 | 0.534 | 0.534 | 0.534 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.877 | | | 0.195 | 0.222 | 0.222 | 0.222 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.832 | | | 0.163 | 0.214 | 0.214 | 0.214 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 1.52 | | | 0.793 | 1.36 | 1.36 | 1.36 | Y | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 1.11 | U | | 1.11 | 2.22 | 2.22 | 2.22 | N | Y | 1 | NA |

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|-----------------|-----------------------|
| Lab Sample ID | L1864258-09 |
| Sys Sample Code | GACO0529T156-1CRS008 |
| Sample Name | GACO0529T156-1CRS008 |
| Sample Date | 5/29/2025 11:30:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.575 | | | 0.256 | 0.555 | 0.555 | 0.555 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.556 | | | 0.199 | 0.292 | 0.292 | 0.292 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.770 | | | 0.148 | 0.219 | 0.219 | 0.219 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.426 | U | | 0.728 | 1.29 | 1.29 | 1.29 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.696 | U | | 0.736 | 1.69 | 1.69 | 1.69 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-10 |
| Sys Sample Code | GACO0529T156-1CRS009 |
| Sample Name | GACO0529T156-1CRS009 |
| Sample Date | 5/29/2025 10:45:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.663 | | | 0.185 | 0.384 | 0.384 | 0.384 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.533 | | | 0.130 | 0.173 | 0.173 | 0.173 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.555 | | | 0.104 | 0.159 | 0.159 | 0.159 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.381 | U | | 0.494 | 0.856 | 0.856 | 0.856 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | -1.20 | U | | 0.627 | 1.25 | 1.25 | 1.25 | N | Y | 1 | NA |

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|-----------------|-----------------------|
| Lab Sample ID | L1864258-11 |
| Sys Sample Code | GACO0529T156-1CRS010 |
| Sample Name | GACO0529T156-1CRS010 |
| Sample Date | 5/29/2025 10:55:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.992 | | | 0.305 | 0.552 | 0.552 | 0.552 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.681 | | | 0.207 | 0.294 | 0.294 | 0.294 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.733 | | | 0.173 | 0.267 | 0.267 | 0.267 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 1.55 | | | 0.874 | 1.48 | 1.48 | 1.48 | Y | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 1.13 | U | | 1.02 | 2.22 | 2.22 | 2.22 | N | Y | 1 | NA |

| | |
|-----------------|-----------------------|
| Lab Sample ID | L1864258-12 |
| Sys Sample Code | GACO0529T156-1CRS011 |
| Sample Name | GACO0529T156-1CRS011 |
| Sample Date | 5/29/2025 11:10:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.878 | | | 0.247 | 0.445 | 0.445 | 0.445 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.539 | | | 0.164 | 0.249 | 0.249 | 0.249 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.540 | | | 0.149 | 0.250 | 0.250 | 0.250 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.351 | U | | 0.818 | 1.59 | 1.59 | 1.59 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | -1.88 | U | | 1.58 | 3.35 | 3.35 | 3.35 | N | Y | 1 | NA |

| | |
|------------------------|-----------------------|
| Lab Sample ID | L1864258-13 |
| Sys Sample Code | GACO0529T156-1CRS012 |
| Sample Name | GACO0529T156-1CRS012 |
| Sample Date | 5/29/2025 10:45:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.813 | | | 0.182 | 0.285 | 0.285 | 0.285 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.613 | | | 0.132 | 0.176 | 0.176 | 0.176 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.619 | | | 0.131 | 0.167 | 0.167 | 0.167 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.805 | U | | 0.592 | 1.08 | 1.08 | 1.08 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.632 | U | | 0.912 | 1.96 | 1.96 | 1.96 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-14 |
| Sys Sample Code | GACO0529T156-1CRS013 |
| Sample Name | GACO0529T156-1CRS013 |
| Sample Date | 5/29/2025 11:10:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.886 | | | 0.367 | 0.769 | 0.769 | 0.769 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.479 | | | 0.227 | 0.380 | 0.380 | 0.380 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.675 | | | 0.207 | 0.364 | 0.364 | 0.364 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.662 | U | | 1.04 | 1.96 | 1.96 | 1.96 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.784 | U | | 1.68 | 3.50 | 3.50 | 3.50 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-15 |
| Sys Sample Code | GACO0529T156-1CRS014 |
| Sample Name | GACO0529T156-1CRS014 |
| Sample Date | 5/29/2025 10:45:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.807 | | | 0.260 | 0.460 | 0.460 | 0.460 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.524 | | | 0.167 | 0.237 | 0.237 | 0.237 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.654 | J | FD | 0.150 | 0.229 | 0.229 | 0.229 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 1.47 | | | 0.693 | 1.16 | 1.16 | 1.16 | Y | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.879 | U | | 1.02 | 2.13 | 2.13 | 2.13 | N | Y | 1 | NA |

| | |
|------------------------|-----------------------|
| Lab Sample ID | L1864258-16 |
| Sys Sample Code | GACO0529T156-1CRC014 |
| Sample Name | GACO0529T156-1CRC014 |
| Sample Date | 5/29/2025 10:45:00 AM |
| Sample Type | FD |
| Matrix | SO |
| Parent Sample | GACO0529T156-1CRS014 |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 1.04 | | | 0.243 | 0.375 | 0.375 | 0.375 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.663 | | | 0.164 | 0.208 | 0.208 | 0.208 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.922 | J | FD | 0.142 | 0.194 | 0.194 | 0.194 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 1.25 | | | 0.612 | 0.971 | 0.971 | 0.971 | Y | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.786 | U | | 0.696 | 1.54 | 1.54 | 1.54 | N | Y | 1 | NA |

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|-----------------|-----------------------|
| Lab Sample ID | L1864258-17 |
| Sys Sample Code | GACO0529T156-1CRS015 |
| Sample Name | GACO0529T156-1CRS015 |
| Sample Date | 5/29/2025 11:15:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 1.01 | | | 0.334 | 0.429 | 0.429 | 0.429 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.649 | | | 0.239 | 0.333 | 0.333 | 0.333 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.580 | | | 0.195 | 0.355 | 0.355 | 0.355 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 1.51 | U | | 1.03 | 1.69 | 1.69 | 1.69 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 1.25 | U | | 0.835 | 1.82 | 1.82 | 1.82 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-18 |
| Sys Sample Code | GACO0529T156-1CRS016 |
| Sample Name | GACO0529T156-1CRS016 |
| Sample Date | 5/29/2025 10:45:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.648 | | | 0.199 | 0.410 | 0.410 | 0.410 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.440 | | | 0.133 | 0.180 | 0.180 | 0.180 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.466 | | | 0.109 | 0.183 | 0.183 | 0.183 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.453 | U | | 0.552 | 0.957 | 0.957 | 0.957 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | -0.483 | U | | 0.599 | 1.36 | 1.36 | 1.36 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-19 |
| Sys Sample Code | GACO0529T156-1CRS017 |
| Sample Name | GACO0529T156-1CRS017 |
| Sample Date | 5/29/2025 10:50:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.442 | U | | 0.271 | 0.600 | 0.600 | 0.600 | N | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.587 | | | 0.214 | 0.329 | 0.329 | 0.329 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.701 | | | 0.186 | 0.280 | 0.280 | 0.280 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.457 | U | | 0.890 | 1.64 | 1.64 | 1.64 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 0.310 | U | | 1.00 | 2.32 | 2.32 | 2.32 | N | Y | 1 | NA |

| | |
|-----------------|-----------------------|
| Lab Sample ID | L1864258-20 |
| Sys Sample Code | GACO0529T156-1CRS018 |
| Sample Name | GACO0529T156-1CRS018 |
| Sample Date | 5/29/2025 11:00:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.618 | | | 0.215 | 0.444 | 0.444 | 0.444 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.571 | | | 0.152 | 0.222 | 0.222 | 0.222 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.653 | | | 0.142 | 0.215 | 0.215 | 0.215 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.415 | U | | 0.713 | 1.37 | 1.37 | 1.37 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | -1.35 | U | | 1.33 | 2.86 | 2.86 | 2.86 | N | Y | 1 | NA |

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|------------------------|-----------------------|
| Lab Sample ID | L1864258-21 |
| Sys Sample Code | GACO0529T156-1CRS019 |
| Sample Name | GACO0529T156-1CRS019 |
| Sample Date | 5/29/2025 11:00:00 AM |
| Sample Type | N |
| Matrix | SO |
| Parent Sample | |
| % Moisture | |

| Analytic Method | Chemical Name | CAS Rn | Fraction | Test Type | Result Unit | Final Result | Final Qual | Reason code | Uncertainty | Final MDL | Final RL | Final QL | Final Detect | Final Report | DF | Basis |
|-----------------|-----------------------|------------|----------|-----------|-------------|--------------|------------|-------------|-------------|-----------|----------|----------|--------------|--------------|----|-------|
| E901.1 | Actinium-228 (Ra-228) | 14331-83-0 | N | INITIAL | pCi/g | 0.828 | | | 0.175 | 0.263 | 0.263 | 0.263 | Y | Y | 1 | NA |
| | Bismuth-214 (Ra-226) | 14733-03-0 | N | INITIAL | pCi/g | 0.539 | | | 0.117 | 0.151 | 0.151 | 0.151 | Y | Y | 1 | NA |
| | Lead-214 | 15067-28-4 | N | INITIAL | pCi/g | 0.779 | | | 0.137 | 0.154 | 0.154 | 0.154 | Y | Y | 1 | NA |
| | Radium-226 (186 KeV) | 13982-63-3 | N | INITIAL | pCi/g | 0.829 | U | | 0.543 | 0.977 | 0.977 | 0.977 | N | Y | 1 | NA |
| | Thorium-234 (U-238) | 15065-10-8 | N | INITIAL | pCi/g | 1.09 | U | | 0.929 | 1.83 | 1.83 | 1.83 | N | Y | 1 | NA |